



MSMR

Medical Surveillance Monthly Report

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Army Medical Surveillance Activity
(AMSA)



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Surveillance Trends

Hospitalizations Among Active Duty Soldiers for "Fevers of Unknown Origin"

In the Army and DoD, there is increasing emphasis on the management of medical resources (including clinical infectious disease and microbiologic diagnostic resources). At the same time, as part of national and international efforts, the DoD is attempting to enhance its capabilities to detect, assess, and respond to "emerging" infectious diseases.

The diagnosis "fever of unknown origin (FUO)" is properly used for cases in which the cause of a temperature elevation remains unclear after the completion of an evaluation consistent with that usually performed in persons presenting with fever.¹ The term is useful because it separates more serious and enigmatic febrile illnesses from those that are self-limited or easily diagnosed (e.g., streptococcal pharyngitis). If the rigor of diagnostic evaluations of febrile soldiers were to decline over time, or if soldiers were to acquire etiologically obscure ("emerging") infectious diseases in clusters or at progressively higher rates, then hospitalizations with discharge diagnoses of "fever of unknown origin" might be expected to increase. This report assesses trends and characteristics of recent hospitalizations of soldiers with "fevers of unknown origin."

Overall: Between January 1990 and June 1997, there were 1,437 hospitalizations of soldiers with discharge diagnoses (1st through 4th) of "fever of unknown origin" (ICD-9: 780.6). The overall

FUO hospitalization rate was 2.68 per 100,000 soldiers per month. Standard curve-fitting procedures were used to describe the long-term trend. The "best fit" of a trendline was a 5th order polynomial (upper curve, figure 1) that generally increased over the period. The long-term trend accounted for only approximately 10% ($R^2 = 0.10$) of the month-to-month variability of incidence; and there were no clear relationships between FUO incidence and season. Demographic characteristics of soldiers hospitalized with FUOs are shown in the table on page 9.

For 646 hospitalizations (45% of the total), FUO was the primary diagnosis, and for 183 of these (12.7% of the total), FUO was the only diagnosis. Of FUO hospitalizations with multiple discharge diagnoses, 77 were associated with vaccine reactions (ICD9: E948-E949). Other diagnoses frequently associated with FUOs were pharyngitis (n=107), unspecified viral infection (n=78), abdominal pain (n=45), pneumonia (n=31), headache (n=29), gastroenteritis/colitis (n=26), volume depletion (n=25), and agranulocytosis (n=22).

Medical treatment facilities: One medical treatment facility ("MTF A") had four-times more FUO cases than any other (MTF A: 236 hospitalizations (16.4% of the total); next highest MTF: 58). At MTF A, between January 1990 and September 1994, the average number of FUO hospi-

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talizations was 1.3 per month, and there was only one month with as many as three cases. Nearly one-third (32.9%) of cases were among Privates/E-1, and the mean length of a hospitalization was 12.9 days. In contrast, at MTF A after September 1994, the FUIO rate was 4.8 per month, there were 19 months with three or more cases, nearly half (45.9%) of cases were among Privates/E-1, and the mean length of a hospitalization was 1.2 days. Thus, at MTF A after October 1994 compared to before, FUIO hospitalizations affected lower ranking soldiers, were nearly four-times more frequent, and were approximately one-tenth as long.

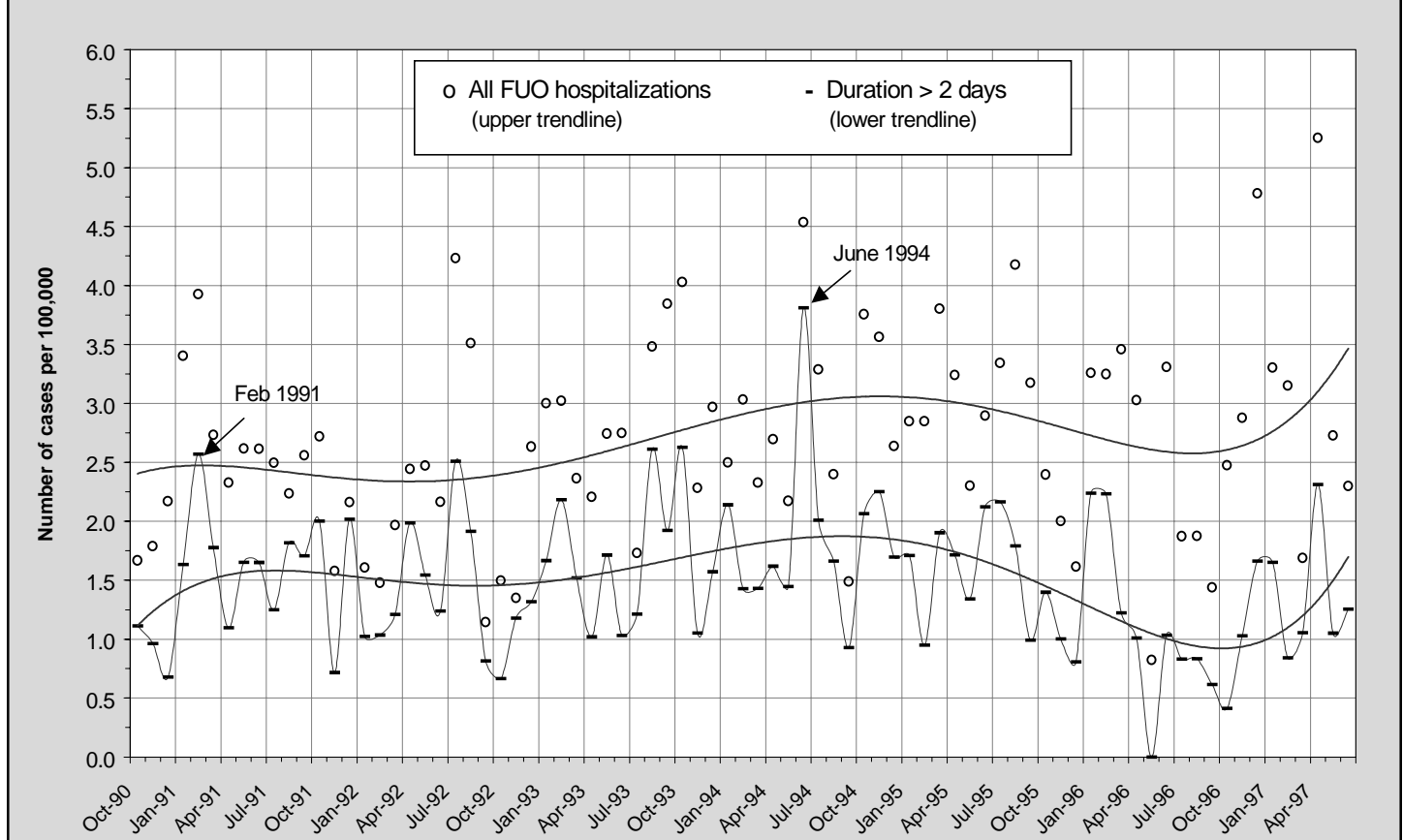
Length of hospitalization: Approximately half of all FUIO hospitalizations were one or two days in duration. Soldiers that were hospitalized three days or longer were thought to potentially represent more serious and perhaps more rigorously evaluated cases. Thus, hospitalizations (n=710)

that were three days or longer (and not associated with vaccine reactions) were analyzed separately. Among these cases, there were more infantrymen than any other military occupational group, and soldiers in this group were more senior than those admitted for shorter times. Otherwise, the longer and shorter hospitalization subgroups were similar with regards to gender and racial/ethnic compositions (table, page 9).

The overall rate of relatively longer hospitalizations (> 2 days) was 1.52 per 100,000 soldiers per month. Until they declined in the spring of 1996, monthly rates fluctuated in a relatively narrow band between approximately 1.0 and 2.0 cases per 100,000 soldiers per month. In turn, the long-term trend was relatively flat through approximately 1995 when it began to decline (lower curve, figure 1). The long-term trend explained approximately 20% of the month-to-month variability of

Continued on page 8

**Figure 1. Hospitalization rates, AD Army, Fevers of unknown origin (ICD9: 780.6)
October 1990 - June 1997**



**TABLE I. Selected sentinel reportable diseases, US Army medical treatment facilities*
December, 1997**

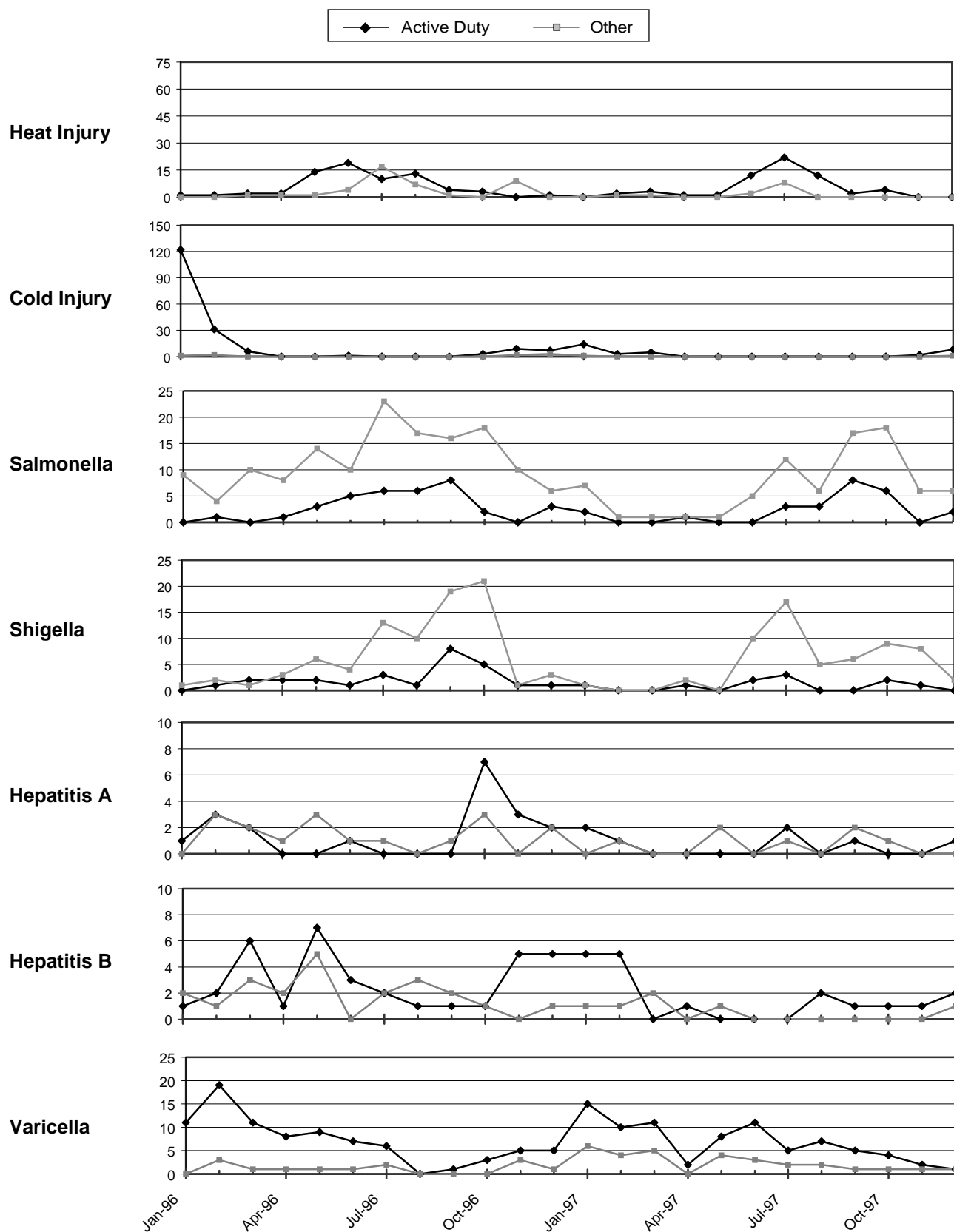
Reporting MTF/Post**	Total number of reports submitted December 1997	Environmental Injuries		Viral Hepatitis		Salmonellosis		Shigella		Varicella	
		Active Duty				Active Duty	Other	Active Duty	Other	Active Duty	Other Adult
		Heat	Cold	A	B						
		Cum. 1997	Cum. 1997	Cum. 1997	Cum. 1997	Cum. 1997	Cum. 1997	Cum. 1997	Cum. 1997	Cum. 1997	Cum. 1997
NORTH ATLANTIC RMC											
Walter Reed AMC	53	0	0	0	1	1	6	0	4	4	3
Aberdeen Prov. Ground, MD	11	2	0	0	0	0	0	0	0	0	0
FT Belvoir, VA	64	0	0	0	4	1	10	0	4	0	0
FT Bragg, NC	4	7	8	0	0	2	42	12	63	0	0
FT Drum, NY	22	5	2	1	4	0	0	0	0	5	0
FT Eustis, VA	18	11	0	1	1	0	7	0	9	5	0
FT Knox, KY	24	7	0	0	0	0	1	0	0	0	0
FT Lee, VA	9	0	0	0	0	0	0	0	0	0	0
FT Meade, MD	52	0	0	0	0	0	2	0	0	0	0
West Point, NY	4	0	0	0	1	0	1	0	0	1	0
GREAT PLAINS RMC											
Brooke AMC	25	5	0	4	0	2	5	0	4	0	0
Beaumont AMC	33	1	0	1	1	0	6	0	1	11	3
FT Carson, CO	99	2	2	1	2	1	4	0	0	0	0
FT Hood, TX	97	5	0	4	6	0	2	0	0	3	0
FT Huachuca, AZ	0	0	0	0	0	0	0	2	3	1	0
FT Leavenworth, KS	0	0	0	0	1	1	0	0	0	0	0
FT Leonard Wood, MO	26	4	2	2	1	0	0	0	0	16	10
FT Polk, LA	0	7	1	0	0	0	0	0	0	0	0
FT Riley, KS	40	5	0	0	0	0	1	0	1	0	0
FT Sill, OK	15	12	0	2	4	0	1	0	1	0	0
SOUTHEAST RMC											
Eisenhower AMC	5	0	0	0	1	0	0	0	0	0	0
FT Benning, GA	19	28	2	0	0	0	5	2	2	4	10
FT Campbell, KY	29	7	13	0	1	2	3	3	8	12	9
FT Jackson, SC	0	0	0	0	1	2	1	0	0	9	0
FT McClellan, AL	3	1	0	0	0	0	0	0	0	0	0
FT Rucker, AL	38	4	0	0	0	0	0	0	0	0	0
FT Stewart, GA	0	4	0	0	0	0	2	0	0	4	0
WESTERN RMC											
Madigan AMC	49	0	0	4	0	1	10	0	0	0	0
FT Irwin, CA	0	1	0	0	0	0	0	0	0	0	0
FT Wainwright, AK	13	0	7	1	1	0	0	0	0	0	0
OTHER LOCATIONS											
Tripler	45	2	0	1	1	0	6	0	0	0	0
Europe	117	2	1	2	15	27	43	1	4	18	0
Korea	23	8	1	0	8	1	0	1	1	6	0
Total	937	130	39	24	54	41	158	21	105	99	35

* Based on date of onset.

** Reports are included from main and satellite clinics. Not all sites reporting.

Date of Report: 7-Jan-98

FIGURE I. Selected sentinel reportable diseases, US Army medical treatment facilities*
Cases per month, Jan 96 - Dec 97



* Reports are included from main and satellite clinics. Not all sites reporting.

**TABLE II. Reportable sexually transmitted diseases, US Army medical treatment facilities*
December, 1997**

Reporting MTF/Post**	Chlamydia		Urethritis non-spec.		Gonorrhea		Herpes Simplex		Syphilis Prim/Sec		Syphilis Latent		Other STDs**	
	Cur. Month	Cum. 1997	Cur. Month	Cum. 1997	Cur. Month	Cum. 1997	Cur. Month	Cum. 1997	Cur. Month	Cum. 1997	Cur. Month	Cum. 1997	Cur. Month	Cum. 1997
NORTH ATLANTIC RMC														
Walter Reed AMC	2	47	1	9	2	21	0	26	0	2	0	0	0	1
Aberdeen Prov. Ground, MD	0	21	0	3	0	22	0	7	0	0	0	0	0	0
FT Belvoir, VA	5	160	0	0	2	36	1	18	0	1	0	2	0	7
FT Bragg, NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FT Drum, NY	4	104	0	6	4	39	1	8	0	2	0	0	0	0
FT Eustis, VA	14	132	0	0	2	26	0	1	0	1	0	1	0	0
FT Knox, KY	13	123	0	0	8	60	3	44	0	0	0	2	0	0
FT Lee, VA	5	20	0	0	1	9	0	0	0	0	0	0	0	0
FT Meade, MD	3	28	1	28	0	6	0	10	0	0	0	0	0	0
West Point, NY	0	8	0	0	0	0	0	0	0	0	0	2	0	0
GREAT PLAINS RMC														
Brooke AMC	12	172	0	0	1	52	1	10	1	1	0	0	0	0
Beaumont AMC	3	286	0	0	1	60	0	51	0	2	0	1	0	2
FT Carson, CO	30	310	9	224	12	84	7	59	0	0	0	1	0	0
FT Hood, TX	26	644	21	189	26	372	4	59	1	11	0	3	1	8
FT Huachuca, AZ	0	34	0	0	0	5	0	3	0	0	0	0	0	0
FT Leavenworth, KS	0	26	0	0	0	6	0	0	0	0	0	0	0	0
FT Leonard Wood, MO	3	97	1	28	0	29	0	0	0	0	0	1	0	0
FT Polk, LA	0	56	0	0	0	18	0	5	0	0	0	2	0	3
FT Riley, KS	14	190	0	0	6	47	0	0	0	0	0	1	0	1
FT Sill, OK	10	180	1	42	1	75	0	11	0	0	0	0	0	7
SOUTHEAST RMC														
Eisenhower AMC	0	94	0	0	0	28	0	44	0	1	0	0	0	8
FT Benning, GA	1	66	0	0	1	65	1	33	0	1	0	2	0	0
FT Campbell, KY	10	289	0	0	8	171	0	21	0	0	0	1	0	1
FT Jackson, SC	0	638 [§]	0	0	0	18	0	41	0	1	0	0	0	3
FT McClellan, AL	0	9	0	0	0	6	0	1	0	0	0	0	0	1
FT Rucker, AL	3	35	0	0	2	7	0	5	0	0	0	0	0	1
FT Stewart, GA	0	116	0	161	0	94	0	59	0	0	0	2	0	27
WESTERN RMC														
Madigan AMC	12	250	4	121	2	60	1	48	0	0	0	0	0	0
FT Irwin, CA	0	38	0	0	0	6	0	4	0	1	0	0	0	0
FT Wainwright, AK	2	14	0	0	0	0	0	1	0	0	0	0	0	0
OTHER LOCATIONS														
Tripler	17	155	0	0	1	48	8	87	0	0	0	0	0	0
Europe	10	596	0	10	0	147	0	31	0	2	0	0	0	3
Korea	0	34	0	0	1	3	0	2	0	0	0	0	0	0
Total	199	4972	38	821	81	1620	27	689	2	26	0	21	1	73

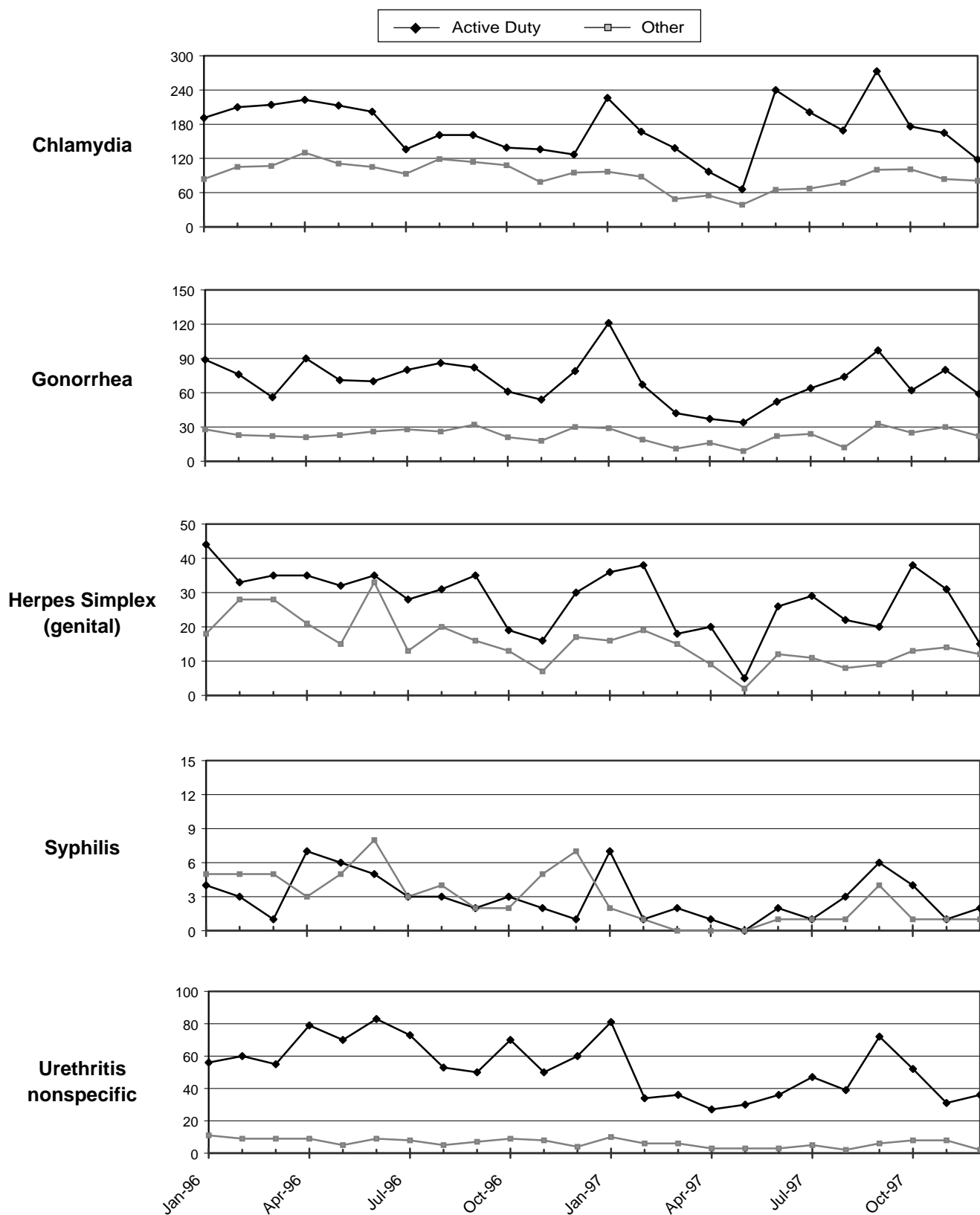
* Reports are included from main and satellite clinics. Not all sites reporting.

Date of Report: 7-Jan-98

** Other STDs: (a) Chancroid (b) Granuloma Inguinale (c) Lymphogranuloma Venereum (d) Syphilis unsp. (e) Syph, tertiary (f) Syph, congenital

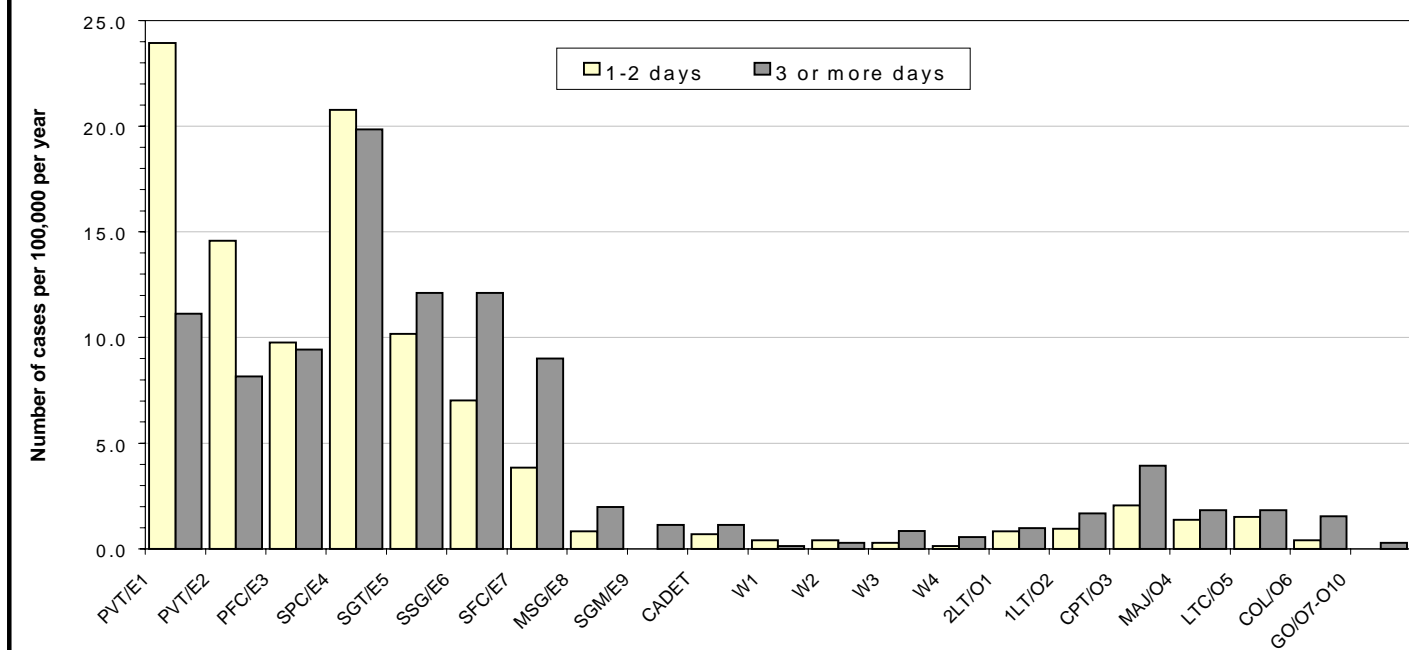
§ Includes participants in a large-scale ongoing chlamydia study (females only).

FIGURE II. Reportable sexually transmitted diseases, US Army medical treatment facilities*
Cases per month, Jan 96 - Dec 97



* Reports are included from main and satellite clinics. Not all sites reporting.

Figure 2. FVO (ICD9: 780.6) hospitalizations by length of hospitalization and rank/grade, active duty Army, January 1990 - June 1997



Continued from page 3

incidence of these cases ($R^2 = 0.19$). There were only two months (February 1991 and June 1994) when actual rates significantly exceeded those expected based on the long-term trend (Poisson dist., $p < .05$).

Editorial comment: If the diagnosis of FVO were applied rigorously and consistently Army-wide, it would provide a useful tool for detecting and assessing characteristics of infectious diseases that may “emerge” among soldiers. Unfortunately, recent Army experience suggests that the diagnosis of FVO has been applied nonspecifically and inconsistently. For example, since October 1994, one MTF at a post with a large training mission has had a disproportionate number of FVO hospitalizations – generally, of “entry level” enlisted soldiers for one or two days duration. These hospitalizations more likely reflect the background of self-limited febrile illnesses that continuously affect military trainees than serious febrile illnesses that defy attempts at etiologic diagnosis. In turn, the nonspecific and inconsistent use of the FVO diagnosis probably accounts for much of the variability in Army-wide month-to-month FVO incidence rates. As a result, high monthly rates of FVO hospitalizations may not reliably indicate unusual occurrences of serious febrile illnesses.

However, FVO hospitalizations of more than two days duration may provide a more reliable marker of significant febrile illnesses that are difficult to diagnose. For example, compared to FVO cases of shorter duration, those that were hospitalized for 3 or more days were more senior in grade and more likely to be infantrymen (who, during field training and operations within and outside the US, may be exposed more than other occupational groups to unusual or rare infectious threats). For years, month-to-month rates of FVOs of 3 or more days duration fluctuated in a fairly narrow range – in fact, in the past seven years, there were only two months (less than 3% of the total) during which FVO incidence significantly exceeded the nominal baseline (as defined by the long-term trend). This finding suggests that routine monitoring of FVO hospitalizations of 3 or more days duration may be useful to detect multifocal outbreaks of “emerging” infectious diseases, to assess their sizes and distributions, and to track the directions, rates, and modes of their spread.

References:

1. Petersdorf, RG, Beeson, PB. Fever of unexplained origin: report of 100 cases. *Medicine*, 40:1, 1961.

FUO hospitalizations among active duty soldiers, January 1990 - June 1997

	Hospitalized < 2 days		Hospitalized > 2 days		Total	
		%		%		%
Gender						
Female	160	22.0%	152	21.4%	312	21.7%
Male	567	78.0%	558	78.6%	1125	78.3%
Race/ethnic						
White	357	49.1%	318	44.8%	675	47.0%
Black	186	25.6%	173	24.4%	359	25.0%
Hispanic	27	3.7%	42	5.9%	69	4.8%
Native Amer	2	0.3%	7	1.0%	9	0.6%
Asian/Pac Isl	12	1.7%	15	2.1%	27	1.9%
Other/unk/missing	143	19.7%	155	21.8%	298	20.7%
Military occupational specialty						
31 (telecomm)	119	16.4%	65	9.2%	184	12.8%
11 (infantry)	53	7.3%	86	12.1%	139	9.7%
91 (medical)	61	8.4%	65	9.2%	126	8.8%
13 (artillery)	29	4.0%	35	4.9%	64	4.5%
63 (mechanic)	20	2.8%	34	4.8%	54	3.8%
76 (supply)	21	2.9%	33	4.6%	54	3.8%
88 (transportation)	24	3.3%	29	4.1%	53	3.7%
71 (admin)	13	1.8%	38	5.4%	51	3.5%
92 (laboratory)	11	1.5%	26	3.7%	37	2.6%
95 (military police)	15	2.1%	19	2.7%	34	2.4%
75 (personnel)	9	1.2%	22	3.1%	31	2.2%

Reports from the Field

Visceral Leishmaniasis among Children of Active Duty US Navy Members, Sigonella, Italy

Visceral leishmaniasis (VL) is a zoonotic disease of public health importance in most regions bordering the Mediterranean Sea, including Central and Southern Italy, Sardinia, and Sicily. The protozoan, *Leishmania infantum*, has been known to be endemic in Sicily since at least 1901. Before World War II, amebiasis, malaria, and leishmaniasis were the "three plagues" of Sicily. After a campaign of malaria eradication using DDT in the 1950's and 60's, however, malaria disappeared and leishmaniasis became rare. While malaria remains an imported disease in Sicily, leishmaniasis has again become endemic.

Leishmania are transmitted to humans through the bites of infected sand flies of the *Phlebotomus* genus. In Sicily, sand flies thrive in the island's warm, moist environment. Dogs are the principal reservoir of *L. infantum*, and estimates of the prevalence of leishmaniasis in Sicilian canines range from 15 to 50%. Thus, in Sicily, and especially in Catania Province, canine leishmaniasis is endemic, sand flies that are competent vectors of leishmaniasis are ubiquitous, and human leishmaniasis evokes greater public health concern each year.

The period from initial infection with the para-

site until presentation of the first clinical manifestations of the disease is estimated to range from 2 months to 1 year. Children and adults are equally at risk of infection when first exposed. Skin testing throughout Italy has demonstrated that lifelong immunity from subclinical infection may occur. Current serologic tests, including ELISA, Direct Agglutination (DAT), and Immunofluorescent Antibody (IFAT), are not reliable for clinical diagnostic purposes. Thus, the diagnosis of VL can only be confirmed by demonstrating the parasite in tissue or body fluids.

VL is a reportable disease in Italy; however, many cases are misdiagnosed or not reported (especially those not hospitalized). Still in 1995, there were 38 cases reported from throughout Sicily. In the Italian community of Catania Province, there are 10-15 hospitalized cases each year; however, until recently, there were no reported VL cases among US military personnel or their family members living there. Since 1996, however, there have been two cases among children of US Navy servicemembers stationed in Sigonella (Catania Province). This report summarizes the recent cases and describes measures underway to assess and counter the leishmania threat.

Patient 1: A 7.5 month old white male infant was medically evacuated to Walter Reed Army Medical Center (WRAMC) with a 17 day history of temperatures to 105°F., hepatosplenomegaly, elevated liver associated enzymes, hyperlipidemia, anemia, and thrombocytopenia. His physical examination revealed a temperature of 103.7°F., a palpable spleen tip, and a liver edge that was palpable 5 cm. below the right costal margin. Laboratory tests at the time of admission documented AST 1,621, ALT 567, total bilirubin 1.9, hematocrit 31, platelets 108,000, and WBCs 11,000 (3 segs/19 bands/71 lymphs/4 monos). A bone marrow biopsy revealed hemophagocytosis and small noncaseating granulomas. At Walter

Reed Army Institute of Research, special cultures of bone marrow and liver tissue revealed *Leishmania infantum* MON 189. At WRAMC, the patient was successfully treated with intravenous sodium stibogluconate (pentavalent antimony) for 28 days under an investigational new drug (IND) protocol.

Patient 2: A healthy and athletic appearing 15 year old black female was medically evacuated to WRAMC with complaints of headache, fevers to 104°F., anorexia, and soft tissue ecchymoses (without associated trauma) of approximately three weeks duration. The child's clinical state had not improved with ceftriaxone therapy. Physical examination revealed fever, hepatosplenomegaly, and ecchymoses. Laboratory tests documented WBCs 2,700 (31 segs/4 bands/52 lymphs), hematocrit 28, platelets 43,000, AST 107, ALT 72, and LDH 2,979. A bone marrow biopsy revealed amastigotes consistent with *Leishmania*, and a culture of an aspirate of bone marrow grew *Leishmania*. At WRAMC, the patient was successfully treated under the same IND protocol as patient 1.

Travel/geographic exposures: Both patients lived near the sea in Catania Province. The infant (patient 1) was born in Sicily, and, prior to his illness, had never left the island. In contrast, patient 2 had traveled extensively in Italy. For approximately a year prior to her illness, she lived in the vicinity of patient 1 in an area with abundant sand flies. She became ill within months after moving to US government housing in an area with relatively few sand flies. Thus, it was considered likely that both infections were acquired from the beach area of Catania, either from feral dogs or a family pet (patient 2 had a pet dog of Sicilian origin).

Sand fly (vector) surveys: The US Navy Environmental and Preventive Medicine Unit #7 (NEPMU-7) is currently assessing the concentrations and characteristics of sand flies in Catania Province. (Such studies have not been carried out in the Catania area of Sicily since the 1930's.) To

Continued on page 12

ARD Surveillance UpdateLegend

—	ARD Rate	= (ARD cases / Trainees) * 100
- - -	SASI*	= ARD Rate * Strep Rate**

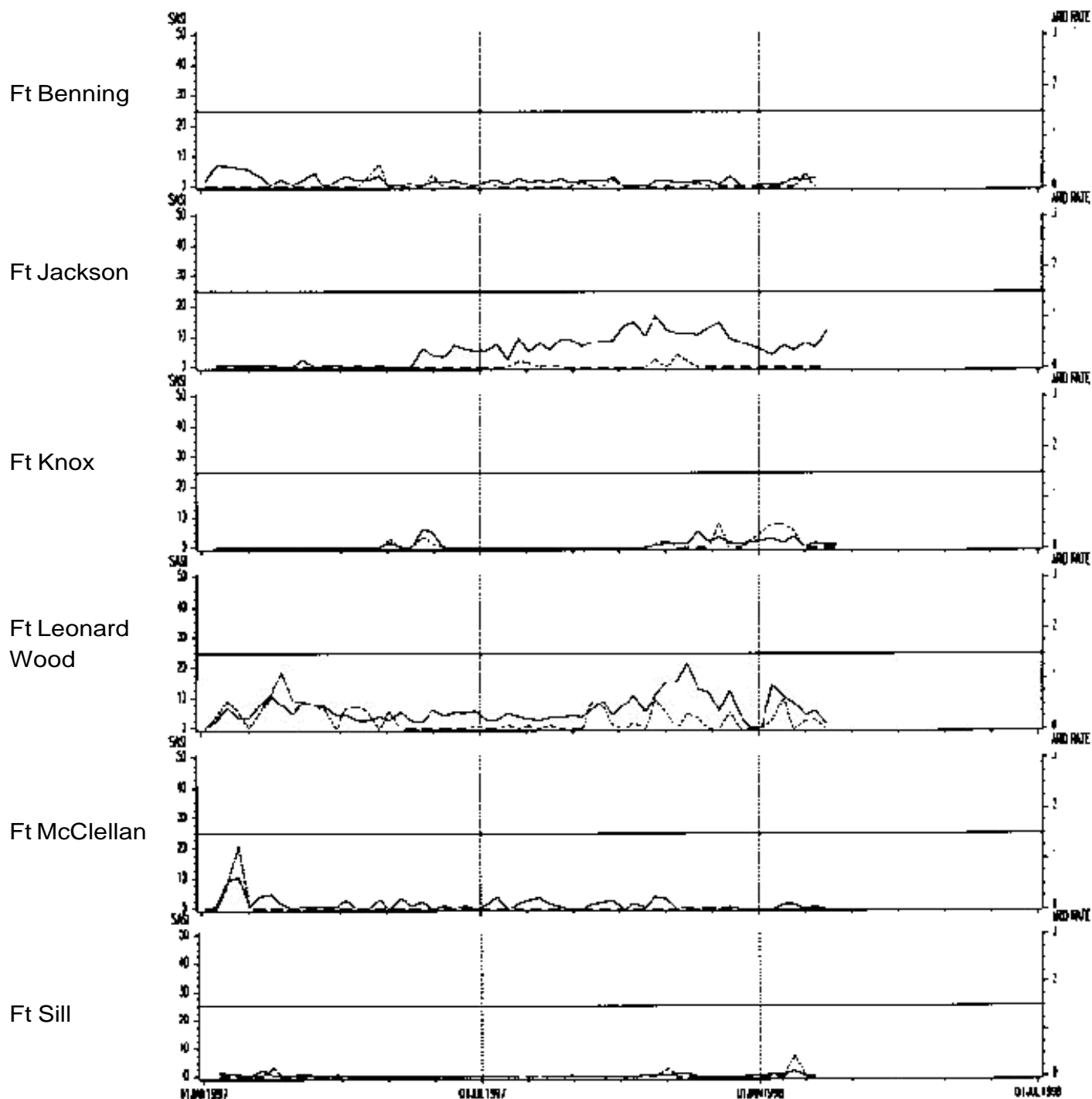


Figure III. ARD surveillance rates, submitted by Army TRADOC posts

* Strep/ARD Surveillance Index (SASI)

**Strep Rate= (GABHS(+) / Cultures) *100

Note: SASI has proven to be a reliable predictor of serious strep-related morbidity, especially acute rheumatic fever.

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date, surveys have focused on enumerating species that are capable of transmitting leishmaniasis to humans, especially in areas of Catania where VL has been documented among Italian residents.

From May through November of 1996 and 1997, sand flies were collected (approximately 5,000 specimens) using the sticky trap (oil paper) method. *Sergentomyia minuta* (72.4%), found at all sampling sites, were the most abundant and ubiquitous of the collection. Species of genus *Phlebotomus* included *P. perniciosus* (23.3%), *P. perfiliewi* (1.1%), and *P. neglectus* (0.2%). A single specimen of *P. papatasi* was collected near the Naval Air Station, Sigonella. All species, with the exception of *Sergentomyia minuta*, are competent to transmit the parasite to humans.

During September of both 1996 and 1997, CDC light traps were used to attempt to document sand fly infections with *Leishmania*. Collecting sites were located throughout Catania and represented the diversity of the region. No light trapped sand fly females contained parasites; hence, vertical transmission of *L. infantum* could not be documented in the region by these studies.

Canine (natural reservoir) surveys: Subclinical *Leishmania* infections of dogs are common in endemic areas worldwide. Canine leishmaniasis has been imported into the US in dogs returning from overseas (personal communication, Quaka, TE). Currently, 1-3 dogs from US households in the Catania area are euthanized each week due to *Leishmania* infections. As feral dog populations increase in Italy and Sicily, it will become increasingly important to monitor the extent of non-clinical infections in dogs residing with US military families.

To document infection incidence rates among US owned dogs, USNEPMU-7, in collaboration with the US Army Veterinarian Office (CPT William Smith), proposed serologic testing of dogs as they

arrive in Sicily, annually thereafter, and finally before their departure. This prospective survey will document prevalences and epidemiologic/demographic correlates of asymptomatic canine *Leishmania* infections. The information will enhance assessment and characterization of the risks of human VL during a 2-3 year tour in Sicily.

Reports submitted by George R. Orndorff, CDR, USN, Head, Department of Epidemiology, USNEPMU-7, Sigonella, Italy and Naomi Aronson, LTC, MC, Infectious Disease Service, Walter Reed Army Medical Center, Washington, DC.

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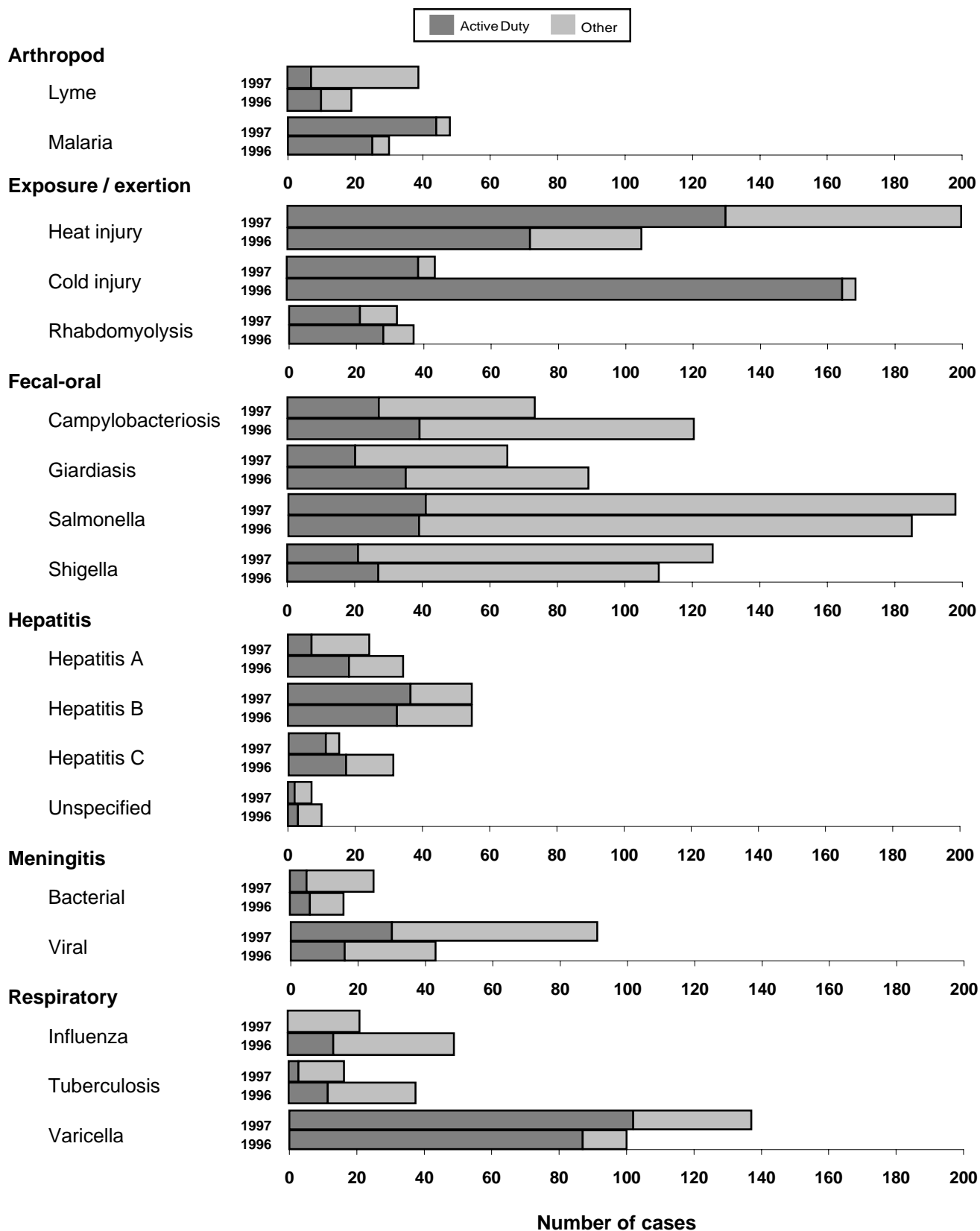
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TABLE S1. Reportable conditions reported through Medical Surveillance System, Jan-Dec 1997*

Diagnosis	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total	Diagnosis	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
Amebiasis	0	0	0	0	0	Malaria, falciparum	1	0	5	2	8
Anthrax	0	0	0	0	0	Malaria, malariae	0	0	0	0	0
Arboviral fever, unsp.	0	0	0	0	0	Malaria, ovale	0	0	0	0	0
Asbestosis	0	0	0	0	0	Malaria, unspecified	0	4	1	0	5
Botulism	0	1	0	1	2	Malaria, vivax	1	4	25	5	35
Brucellosis	0	1	0	0	1	Measles	0	5	1	0	6
Campylobacteriosis	15	17	25	16	73	Meningitis, Viral	9	19	47	16	91
Carbon monoxide intx.	4	5	0	1	10	Meningitis, Bact.	7	7	5	6	25
Chancroid	0	0	1	0	1	Mercury intoxication	0	0	0	0	0
Chemical agent exp.	0	1	0	3	4	Mumps (adults only)	3	2	1	0	6
Chlamydia	1233	1272	1473	994	4972	Mycobacterial inf.	1	1	3	0	5
Cholera	0	0	0	0	0	Pertussis	2	0	2	2	6
Coccidioidomycosis	2	1	0	0	3	Plague	0	0	0	0	0
CWI, frostbite	25	0	0	13	38	Pneumococcal pneum.	0	1	1	0	2
CWI, hypothermia	0	0	0	4	4	Poliomyelitis	0	0	0	0	0
CWI, immersion type	0	0	0	0	0	Psittacosis	0	0	0	0	0
CWI, unspecified	1	0	0	1	2	Q fever	0	0	0	0	0
Dengue fever	1	2	0	1	4	Rabies, human	0	0	0	0	0
Diphtheria	0	0	0	0	0	Radiation injury	0	0	0	2	2
Ehrlichiosis	0	0	2	0	2	Relapsing fever	0	0	0	0	0
Encephalitis	1	1	1	1	4	Reye syndrome	0	0	0	0	0
Giardiasis	15	6	28	16	65	Rhabdomyolysis	7	6	13	6	32
Gonorrhea	391	401	465	363	1620	Rheumatic fever	0	0	0	0	0
Granuloma Inguinale	8	2	1	0	11	Rift Valley Fever	0	0	0	0	0
Guillain-Barre Syndrome	3	1	0	0	4	RMSF	0	0	0	0	0
H. influenzae, inv.	2	3	2	3	10	Rubella	1	1	0	0	2
Heat exhaustion	4	51	84	5	144	Salmonellosis	17	38	95	49	199
Heat stroke	6	13	31	2	52	Schistosomiasis	0	0	0	0	0
Hemorrhagic fever	0	0	0	2	2	Shigellosis	6	38	58	24	126
Hepatitis A, Acute	4	10	7	3	24	Syphilis, congenital	1	1	1	1	4
Hepatitis B, Acute	21	12	12	9	54	Syphilis, tertiary	0	2	0	0	2
Hepatitis C, Acute	2	6	6	1	15	Syphilis, latent	6	3	8	4	21
Hepatitis, unspec.	0	1	2	4	7	Syphilis, prim/sec	5	5	11	5	26
Herpes Simplex	203	176	156	154	689	Syphilis, unspec.	5	4	11	5	25
Influenza	18	0	0	4	22	Tetanus	0	0	0	0	0
Kawasaki syndrome	2	1	0	2	5	Toxic shock syndrome	0	0	1	0	1
Lead poisoning	2	3	2	0	7	Toxoplasmosis	0	1	0	0	1
Legionellosis	0	0	0	0	0	Trichinellosis	2	0	0	0	2
Leish, cutaneous	8	3	3	0	14	Trypanosomiasis, Afr.	0	0	0	0	0
Leish, mucocutaneous	0	0	0	0	0	Trypanosomiasis, Amer.	0	0	0	0	0
Leish, unspecified	0	0	0	0	0	Tuberculosis, pulmonary	4	5	5	3	17
Leish, visceral	0	0	0	0	0	Tularemia	1	0	0	1	2
Leish, viscerotropic	0	0	0	0	0	Typhoid fever	0	0	1	0	1
Leprosy	0	1	1	0	2	Typhus fever	0	0	0	0	0
Leptospirosis	0	0	0	0	0	Urethritis, non-specific	212	214	218	177	821
Listeriosis	0	0	0	0	0	Vaccine advrs event	0	0	0	0	0
Lyme disease	5	7	23	4	39	Varicella, adult only	63	34	25	12	134
Lymphogranuloma Vnrm	12	15	1	2	30	Yellow fever	0	0	0	0	0
Total						2342	2408	2864	1929	9543	

* Based on date of onset.

FIGURE S1. Sentinel reportable diseases, United States Army*
Comparison of 1997 and 1996

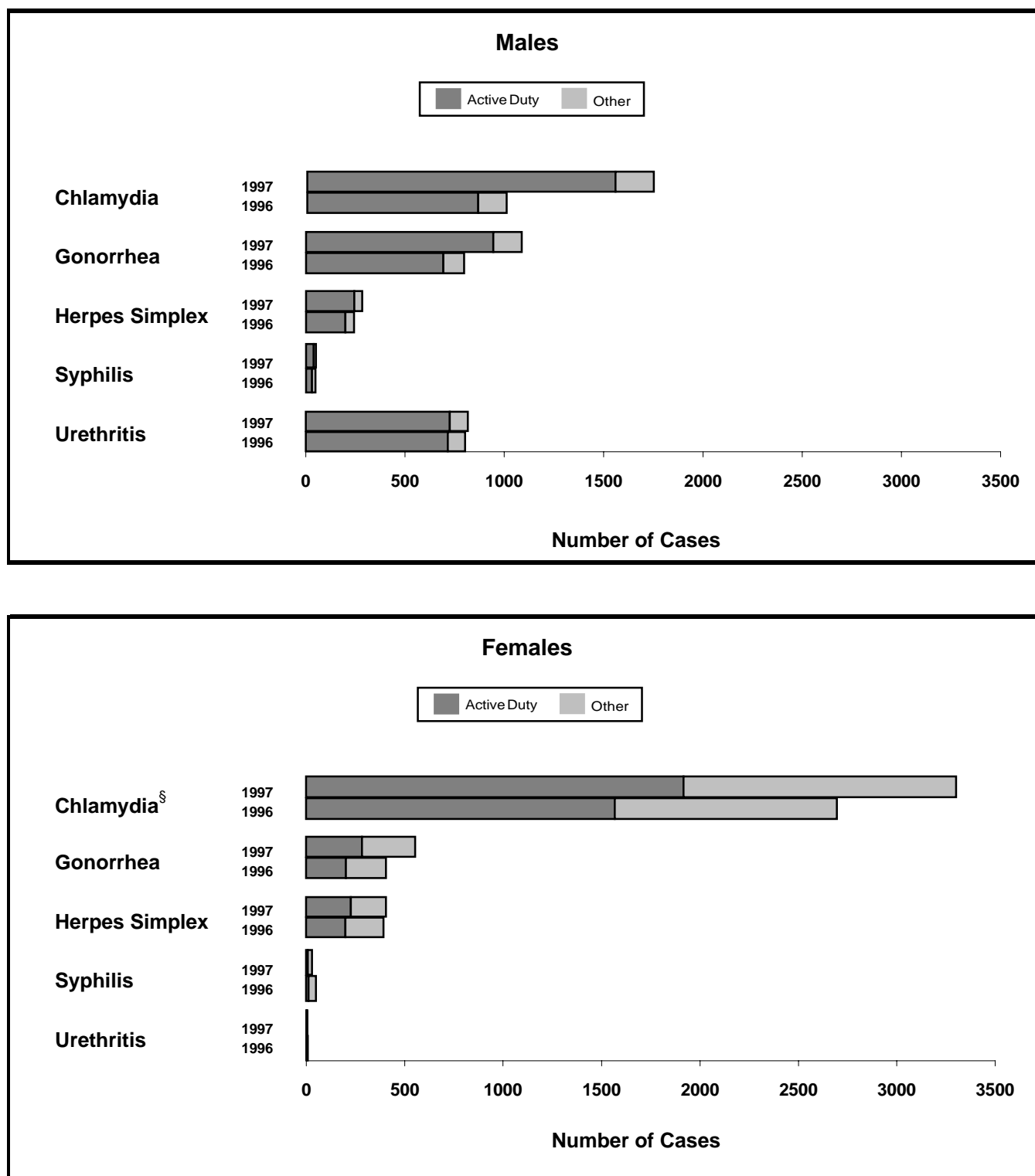


* Based on date of onset.

** Reports are included from main and satellite clinics. Not all sites reporting.

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FIGURE S2. Sentinel reportable STDs, United States Army*
Comparison of 1997 and 1996, by gender



* Based on date of onset.

** Reports are included from main and satellite clinics. Not all sites reporting.

§ Includes participants in a large-scale ongoing chlamydia study (females only).

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TABLE S2. Reported heat and cold injuries, United States Army, *
January 1997 - December 1997

Reporting MTF/Post**	Heat Injuries				Cold Injuries							
	Heat Exhaustion		Heat Stroke		Frostbite		Hypothermia		Immersion		Unspecified	
	M	F	M	F	M	F	M	F	M	F	M	F
NORTH ATLANTIC RMC												
Walter Reed AMC	1	-	-	-	-	-	-	-	-	-	-	-
Aberdeen Prov. Ground, MD	-	1	2	-	-	-	-	-	-	-	-	-
FT Belvoir, VA	-	-	-	-	-	-	-	-	-	-	-	-
FT Bragg, NC	3	-	4	-	8	-	-	-	-	-	-	-
FT Drum, NY	-	2	3	-	2	-	-	-	-	-	-	-
FT Eustis, VA	-	4	9	-	-	-	-	-	-	-	-	-
FT Knox, KY	1	1	5	-	-	-	-	-	-	-	-	-
FT Lee, VA	-	-	-	-	-	-	-	-	-	-	-	-
FT Meade, MD	-	-	-	-	-	-	-	-	-	-	-	-
West Point, NY	-	-	-	-	-	-	-	-	-	-	-	-
GREAT PLAINS RMC												
Brooke AMC	-	-	4	-	-	-	-	-	-	-	-	-
Beaumont AMC	-	2	1	-	-	-	-	-	-	-	-	-
FT Carson, CO	-	1	-	1	1	-	-	-	-	-	1	-
FT Hood, TX	3	2	-	-	-	-	-	-	-	-	-	-
FT Huachuca, AZ	-	-	-	-	-	-	-	-	-	-	-	-
FT Leavenworth, KS	-	-	-	-	-	-	-	-	-	-	-	-
FT Leonard Wood, MO	3	3	1	-	1	3	-	-	-	-	-	-
FT Polk, LA	1	1	6	-	-	-	-	-	-	-	-	-
FT Riley, KS	1	-	6	-	-	-	-	-	-	-	-	-
FT Sill, OK	-	1	11	-	-	-	-	-	-	-	-	-
SOUTHEAST RMC												
Eisenhower AMC	-	-	-	-	-	-	-	-	-	-	-	-
FT Benning, GA	21	3	26	1	-	-	2	1	-	-	-	-
FT Campbell, KY	7	-	-	-	11	1	-	-	-	-	-	1
FT Jackson, SC	-	-	-	-	-	-	-	-	-	-	-	-
FT McClellan, AL	1	-	1	-	-	1	-	-	-	-	-	-
FT Rucker, AL	1	5	31	-	-	-	-	-	-	-	-	-
FT Stewart, GA	3	1	-	-	-	-	-	-	-	-	-	-
WESTERN RMC												
Madigan AMC	-	-	-	-	-	-	-	-	-	-	-	-
FT Irwin, CA	-	-	1	-	-	-	-	-	-	-	-	-
FT Wainwright, AK	-	-	-	-	7	2	-	-	-	-	-	-
OTHER LOCATIONS												
Tripler	1	-	-	1	-	-	-	-	-	-	-	-
Europe	-	-	2	-	-	1	-	-	-	-	-	-
Korea	2	1	5	-	-	-	-	1	-	-	-	-
Total	49	28	118	3	30	8	2	2	0	0	1	1

* Army active duty cases only.

** Reports are included from parent and daughter clinics. Not all sites reporting.

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TABLE S3. Cases of notifiable sexually transmitted diseases, United States Army, Jan-Dec 1997*

Reporting MTF/Post**	Chlamydia				Urethritis non-spec.				Gonorrhea				Herpes Simplex				Syphilis Prim/Sec				Syphilis Latent			
	Active Duty		Other		Active Duty		Other		Active Duty		Other		Active Duty		Other		Active Duty		Other		Active Duty		Other	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
NORTH ATLANTIC RMC	8	14	7	18	4	0	5	0	1	2	11	7	5	9	4	8	0	0	2	0	0	0	0	0
Walter Reed AMC																								
Aberdeen Prov. Ground, MD	8	6	3	3	2	0	1	0	14	4	3	1	1	4	2	0	0	0	0	0	0	0	0	0
FT Belvoir, VA	19	22	17	101	0	0	0	0	9	5	9	13	3	4	3	8	1	0	0	0	1	0	1	0
FT Bragg, NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FT Drum, NY	64	20	3	17	6	0	0	0	31	9	0	0	6	1	0	1	2	0	0	0	0	0	0	0
FT Eustis, VA	33	34	9	56	0	0	0	0	14	1	4	7	0	0	0	1	1	0	0	0	1	0	0	0
FT Knox, KY	52	16	8	47	0	0	0	0	39	2	5	13	15	9	2	18	0	0	0	0	1	0	0	1
FT Lee, VA	5	8	1	6	0	0	0	0	1	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0
FT Meade, MD	9	7	3	9	9	1	18	0	1	1	2	2	2	3	5	0	0	0	0	0	0	0	0	0
West Point, NY	1	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
GREAT PLAINS RMC	31	47	14	80	0	0	0	0	13	7	16	15	1	7	1	1	1	0	0	0	0	0	0	0
Brooke AMC																								
Beaumont AMC	82	76	13	115	0	0	0	0	30	13	2	15	14	11	2	24	2	0	0	0	1	0	0	0
FT Carson, CO	147	78	12	73	202	0	22	0	59	7	1	17	16	17	1	25	0	0	0	0	0	0	0	1
FT Hood, TX	254	198	17	175	180	0	9	0	230	60	28	52	32	17	2	8	4	2	2	3	2	0	0	1
FT Huachuca, AZ	15	10	2	7	0	0	0	0	4	1	0	0	1	0	0	2	0	0	0	0	0	0	0	0
FT Leavenworth, KS	4	8	0	15	0	0	0	0	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0
FT Leonard Wood, MO	26	21	11	36	20	0	8	0	5	13	5	6	0	0	0	0	0	0	0	0	1	0	0	0
FT Polk, LA	23	29	0	4	0	0	0	0	11	3	0	4	5	0	0	0	0	0	0	0	1	0	0	1
FT Riley, KS	82	54	4	51	0	0	0	0	20	15	2	9	0	0	0	0	0	0	0	0	1	0	0	0
FT Sill, OK	95	39	3	43	38	2	0	2	55	7	4	9	7	3	0	1	0	0	0	0	0	0	0	0
SOUTHEAST RMC	36	39	2	17	0	0	0	0	17	8	0	3	15	20	1	8	1	0	0	0	0	0	0	0
Eisenhower AMC																								
FT Benning, GA	26	14	5	21	0	0	0	0	41	6	14	4	18	5	5	5	0	1	0	0	1	0	1	0
FT Campbell, KY	70	109	8	102	0	0	0	0	104	31	8	28	14	4	0	3	0	0	0	0	0	1	0	0
FT Jackson, SC	12	594	1	9	0	0	0	0	6	12	0	1	1	38	0	1	1	0	0	0	0	0	0	0
FT McClellan, AL	2	6	0	1	0	0	0	0	3	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0
FT Rucker, AL	3	11	0	24	0	0	0	0	3	3	0	1	3	0	0	2	0	0	0	0	0	0	0	0
FT Stewart, GA	10	60	0	46	150	0	11	0	71	8	7	8	27	18	3	11	0	0	0	0	2	0	0	0
WESTERN RMC	73	59	12	106	105	0	16	0	24	14	7	15	19	7	3	19	0	0	0	0	0	0	0	0
Madigan AMC																								
FT Irwin, CA	20	9	0	9	0	0	0	0	3	2	0	1	2	1	0	1	0	1	0	0	0	0	0	0
FT Wainwright, AK	4	6	0	4	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
OTHER LOCATIONS	65	43	7	40	0	0	0	0	25	12	0	11	25	31	4	27	0	0	0	0	0	0	0	0
Tripler																								
Europe	272	191	33	99	10	0	0	0	99	22	11	15	15	12	2	2	1	1	0	0	0	0	0	0
Korea	7	25	0	2	0	0	0	0	2	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0
Sub-Total	1558	1854	195	1341	726	3	90	2	937	276	142	262	247	224	40	177	14	5	4	3	12	1	3	5
Total	3412		1536		729		92		1213		404		471		217		19		7		13		8	

* Active Duty refers to Army Active Duty only.

** Reports are included from main and satellite clinics. Not all sites reporting.

Date of Report: 7-Jan-98

TABLE III. Active duty force strength by MTF, United States Army, September, 1997*

MTF/Post**	Males							Females							All
	< 20	20-24	25-29	30-34	35-39	>= 40	Total M	< 20	20-24	25-29	30-34	35-39	>= 40	Total F	
NORTH ATLANTIC RMC															
Walter Reed AMC	164	1261	1350	1536	1809	3186	9306	36	382	535	511	480	576	2520	11826
Aberdeen Prov. Ground, MD	423	524	318	378	402	357	2402	78	104	82	63	55	34	416	2818
FT Belvoir, VA	29	275	343	316	304	381	1648	9	96	131	97	83	58	474	2122
FT Bragg, NC	1706	12030	9103	6353	4050	2420	35662	263	1584	1314	702	446	243	4552	40214
FT Drum, NY	456	3327	2331	1308	899	463	8784	76	444	237	124	96	42	1019	9803
FT Eustis, VA	348	1391	1138	957	876	848	5558	113	460	334	173	149	108	1337	6895
FT Knox, KY	2426	2501	1512	1336	1258	784	9817	42	208	162	154	98	79	743	10560
FT Lee, VA	540	828	789	640	478	399	3674	329	358	247	163	112	88	1297	4971
FT Meade, MD	68	765	1053	947	764	898	4495	46	295	311	214	196	154	1216	5711
West Point, NY	29	274	284	728	600	610	2525	5	72	62	121	103	68	431	2956
GREAT PLAINS RMC															
Brooke AMC	580	981	1001	1008	826	949	5345	378	502	436	361	312	306	2295	7640
Wm Beaumont AMC	595	2415	1883	1319	1147	1097	8456	148	664	460	227	163	148	1810	10266
FT Carson, CO	526	4254	3366	2211	1589	847	12793	154	661	448	263	171	109	1806	14599
FT Hood, TX	1641	13048	8969	5587	3781	2284	35310	378	2319	1624	868	578	307	6074	41384
FT Huachuca, AZ	294	1020	1061	796	667	449	4287	136	346	238	177	130	82	1109	5396
FT Leavenworth, KS	21	247	246	595	829	571	2509	21	86	60	87	91	45	390	2899
FT Leonard Wood, MO	2629	1711	1104	1104	833	527	7908	704	467	255	175	98	65	1764	9672
FT Polk, LA	409	2496	1687	1222	781	401	6996	105	418	267	139	83	55	1067	8063
FT Riley, KS	587	3679	2142	1363	867	481	9119	114	443	272	161	84	64	1138	10257
FT Sill, OK	2701	4156	2689	1774	1434	820	13574	101	451	301	180	108	70	1211	14785
Panama	67	607	656	576	468	350	2724	11	96	103	55	47	23	335	3059
SOUTHEAST RMC															
Eisenhower AMC	971	1925	1484	1193	1282	1183	8038	273	526	449	344	337	224	2153	10191
FT Benning, GA	4292	5092	3330	2146	1397	720	16977	117	487	374	232	152	67	1429	18406
FT Campbell, KY	926	6920	5878	3507	2266	1098	20595	159	1056	741	397	240	101	2694	23289
FT Jackson, SC	1932	944	673	814	606	426	5395	1187	575	343	272	165	105	2647	8042
FT McClellan, AL	1054	737	477	577	512	381	3738	371	268	159	101	94	52	1045	4783
FT Rucker, AL	79	635	878	623	493	430	3138	49	179	128	69	56	35	516	3654
FT Stewart, GA	859	6032	4376	2718	1852	1047	16884	166	979	757	358	212	111	2583	19467
WESTERN RMC															
Madigan AMC	698	5071	3936	2666	1907	1296	15574	165	852	651	357	245	214	2484	18058
FT Irwin, CA	119	1275	888	736	497	276	3791	20	174	114	76	49	24	457	4248
FT Wainwright, AK	258	1900	1694	985	645	308	5790	47	303	235	151	113	58	907	6697
OTHER LOCATIONS															
Tripler AMC	564	4089	3480	2252	1584	986	12955	142	723	688	433	311	187	2484	15439
Europe	1269	11189	10785	7422	5568	3735	39968	331	2153	1881	1186	876	517	6944	46912
Korea	1786	7811	5775	4250	3323	2150	25095	478	1468	1033	624	505	281	4389	29484
Unknown	3343	10297	9187	9561	6837	4564	43789	1439	2415	1547	1223	851	459	7934	52969§
Total	34389	121707	95866	71504	53431	37722	414619	8191	22614	16979	10838	7889	5159	71670	487535

* Based on duty zip code. Does not account for TDY.

§ Includes unknown age groups and unknown gender.

** Includes any subordinate catchment areas not listed separately.

Source: Defense Manpower Data Center (DMDC)

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